Historic, archived document

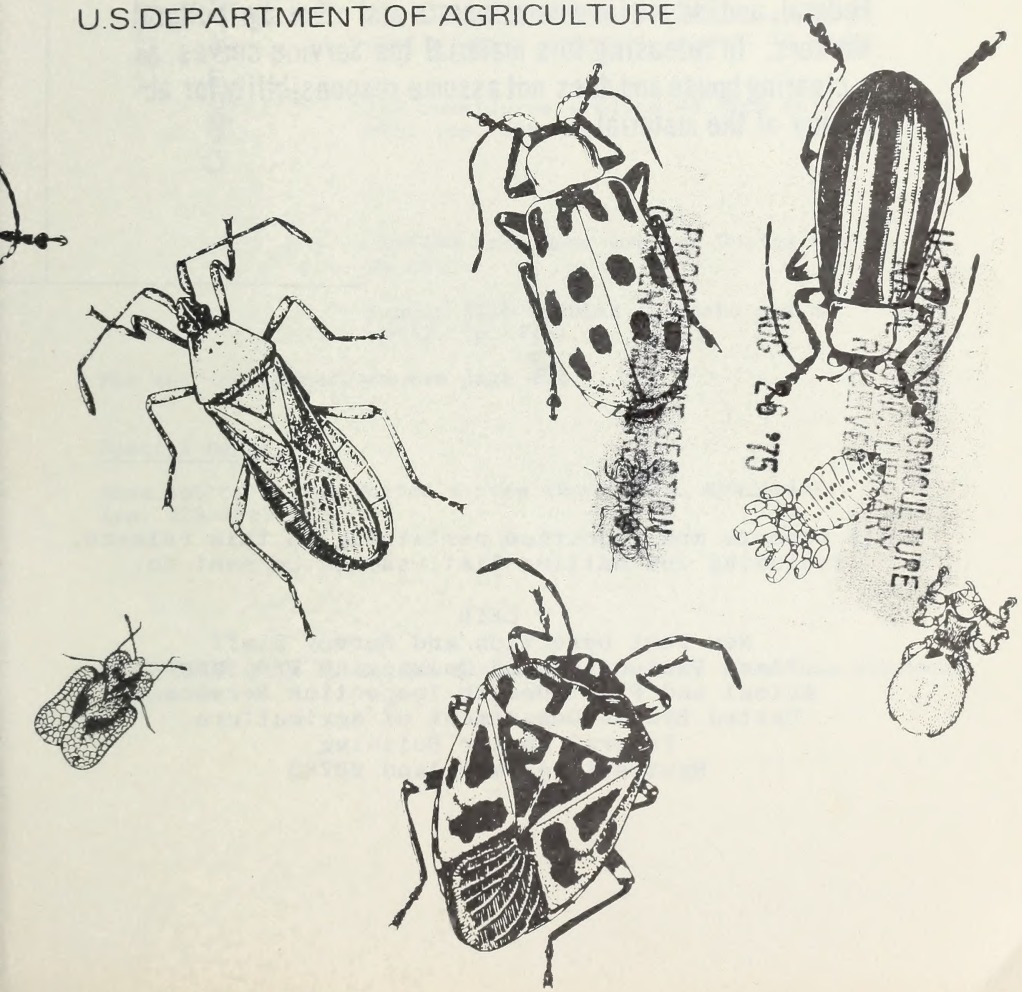
Do not assume content reflects current scientific knowledge, policies, or practices.

1.967
.A2C78 cop.3

VOL. 25 NO. 21 May 23, 1975

Cooperative Economic Insect Report

Issued by
PLANT PROTECTION AND QUARANTINE PROGRAMS
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
U.S. DEPARTMENT OF AGRICULTURE



PROCUREMENT SECTION
CURRENT SERIAL RECORDS

U.S. DEPT. OF AGRICULTURE
NATIONAL AGRIC. LIBRARY
RECEIVED
AUG 26 '75

ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS
NEW PEST DETECTION AND SURVEY STAFF

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Service serves as a clearing house and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

CEIR
New Pest Detection and Survey Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

Volume 25 May 23, 1975 Number 21

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM larvae economic in small grains in several Eastern, Midwestern, and Southern States; potential for serious damage quite high in northwest and north-central Oklahoma. (pp. 405-406, 421).

EUROPEAN CORN BORER damage to corn in Maryland may be well above normal during June due to late emergence. CORN FLEA BEETLE very heavy on newly emerged sweet corn in Maryland. (p. 407).

ALFALFA WEEVIL serious on alfalfa in east-central New Mexico, very active in Panhandle and problem in High Plains of Texas; tip damage heavy in northern Missouri, damage increased in southern Iowa; economic in southern two-thirds of Illinois. Alfalfa weevil populations heaviest in 5 years in Maryland. (pp. 408-410).

BOLL WEEVIL populations entering cotton fields in areas of southern Alabama unusually heavy compared to past 10 years. (p. 412).

● ORIENTAL FRUIT FLY considered eradicated from United States as of May 21, 1975. (pp. 419-420).

Detection

● Four species of APHIDS from moss are new United States records. (pp. 423-431).

New State records are ROSE STEM GIRDLER in Idaho and a TORTRICID MOTH in Alabama. (p. 415).

For new county records see page 422.

Special Report

Moss Aphids in the United States (Homoptera: Aphididae). (pp. 423-431).

Reports in this issue are for week ending May 16 unless otherwise indicated.

CONTENTS

Special Insects of Regional Significance........................405

Insects Affecting

Corn, Sorghum, Sugarcane...407
Small Grains...............408
Forage Legumes.............408
Soybeans...................411
Cotton.....................412
Sugar Beets................412
Potatoes, Tomatoes, Peppers...............412
Beans and Peas............413
Cole Crops................413
Deciduous Fruits and Nuts.414
Small Fruits..............415
Ornamentals...............415
Forest and Shade Trees....416
Man and Animals...........417

Beneficial Insects..418
Federal and State Plant Protection Programs.....................419
Hawaii Insect Report..420
Light Trap Collections..421
Detection...422
Corrections...422
Moss Aphids in the United States (Homoptera: Aphididae).......423

WEATHER OF THE WEEK ENDING MAY 19

Reprinted from Weekly Weather and Crop Bulletin supplied by National Weather Service, NOAA.

HIGHLIGHTS: Above-normal temperatures have finally come to the West and the northern Great Plains. Heavy rains fell in western Nebraska and northeastern Colorado southeastward to Louisiana and east and north to New Jersey. The North Central States had only a small accumulation of rain during the week.

PRECIPITATION: Monday, cooler air began to invade the States through the northern Great Plains and moved rapidly southeastward. Rain and showers fell along the front, especially in the northern portion as it moved eastward through the Corn Belt. Elsewhere, a Low center in Colorado caused disturbances north and south of it. Thunderstorms developed first in eastern Colorado. Half-inch hail fell in Denver. Later, showers and thunderstorms developed in southeast Colorado, the Oklahoma and Texas Panhandles, and in western Kansas and Nebraska. Scattered thunderstorms occurred along the gulf coast and in the dry southern Florida area. Weather systems moved rapidly and by Tuesday the Canadian front had moved to the east coast where a Low center developed off New Jersey. Copius rainfall and thundershowers fell along the front as it moved eastward and the rain area covered all of the east coast and gulf coast. From a Low center in Texas, a line of severe weather extended northward into Kansas and Nebraska. As the line moved eastward, flash floods occurred over the north-central portion of Texas and Louisiana. Wednesday began with heavy precipitation falling in the form of showers and thunderstorms in the lower Mississippi Valley and along the gulf coast. Heavy thunderstorms and some tornadoes were reported from central Texas through the Gulf Coast States and into Arkansas and Tennessee. Another frontal system moved into the northern Great Plains from Canada. Showers and thunderstorms occurred along the front as it

Weather of the week continued on page 432.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (Euxoa auxiliaris) - NEVADA - Larvae caused some damage to alfalfa at Orovada, Humboldt County, but amount of damage difficult to assess due to unusually heavy ground squirrel population feeding in some fields. (Rowe).

ARMYWORM (Pseudaletia unipuncta) - MARYLAND - First larvae of season found on small grains near Cambridge, Dorchester County. Very light to date but heavy populations expected for Caroline, Queen Annes, Dorchester, and Wicomico Counties next 10 days. (U. Md., Ent. Dept.). VIRGINIA - Outbreaks started in small grains in various sections of Eastern Shore. Inasmuch as moth collections were much heavier than in 1974, a serious armyworm year, potential present currently for real problem. It is interesting to note that moths in good condition were collected during relatively warm periods in all months of year at Painter, Accomack County. (Hofmaster). NORTH CAROLINA - Heavy in Pamlico County wheatfields. About 4,000 acres treated to date; treatments appear adequate. (Rea). SOUTH CAROLINA - Widespread larval outbreak on small grains and pastures developed past 14 days. Infestations now present statewide except in Lancaster, Chester, York, Union, and Cherokee Counties. Some very heavy infestations reported. (McCaskill).

MISSISSIPPI - Armyworm larvae damaged wheat in Washington County; up to 18 per square foot found in some of 5 fields checked. (Worley, Batson). ARKANSAS - Major outbreak in wheat and oats noted in eastern area week ending May 9. Larvae ranged 25-30 per square foot in parts of some fields; heaviest and most widespread outbreak in many years. Treatment widespread in southeast and east-central areas, just beginning in northeast area although expected to increase. Treatments in small grains currently ended in southeast and east-central area, continued in northeast area. (Boyer). Heavy populations of this species and Spodoptera ornithogalli (yellowstriped armyworm) moved into rice in some northeast areas. (Barnes).

OKLAHOMA - Armyworm larvae ranged 6-10 per linear foot in wheat in scattered areas of Tillman County, 5-9 in some Cotton County fields, 0-8 in Jackson County. Ranged light to moderate in Kiowa County, light in Harmon and Greer Counties. Ranged up to 16 per square foot in Washita County, up to 9 in Beckham County, up to 6 in Custer County. Very light in Roger Mills County. Ranged 2-4 per square foot in Alfalfa County, 0-8 in Grant and Garfield Counties, 0-6 in Kay County. Generally light in small grains checked in Logan, Kingfisher, Canadian, and Grady Counties, but moderate in one Canadian County field. Treatments made in several southwest and west-central counties; potential for serious damage in northwest and north-central counties next 7-10 days quite high. (Okla. Coop. Sur.). TEXAS - Infestations moderate to heavy in wheat in Baylor, Clay, Wichita, and Wilbarger Counties. Some fields past stage where larvae will cause excessive damage. Growers may need to treat where wheat in dough stage. (Boring).

MISSOURI - Armyworm larvae economic in most small grains in southeast area; ranged 25-30 per row foot. Chemical treatments underway. (Jones). KANSAS - Moth catches still heavy in Barton County blacklight trap (see page 421) and some trapped in Shawnee, Riley, Greeley, and Finney Counties. No larvae found in wheat surveyed in Republic, Pottawatomie, or Cherokee Counties. (Bell). ILLINOIS - Small larvae found in lodged Gallatin County wheat, ranged 8-10 per row foot. Single one-inch larva and several small larvae found in lodged Jackson County wheat, averaged 1 per 3 row feet. None found in Perry, Christian, Montgomery, or Shelby Counties. (Ill. Ins. Rpt.).

ASTER LEAFHOPPER (Macrosteles fascifrons) - WISCONSIN - Populations in vegetables increased slightly over southern half of State. Ranged from 5 per 100 sweeps in northern Iowa and southern Sauk Counties to 2 per 100 sweeps in Columbia County. While populations increased, movement has been northward since no specimens found in east-central and southeast districts. Migrating leafhoppers found in winter grain less in far west and southwest than in central district. This confirms that migration into State decreased in intensity. Overwintering eggs expected to hatch next 7 days. (Wis. Ins. Sur.). NORTH DAKOTA - Spring migrants present in Golden Valley County winter wheat at rate of 24 per 100 sweeps. (Brandvik).

CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - Decreased in Hill and Ellis Counties since heavy rains and influx of beneficial species. Most grain sorghum in Blacklands area large enough to withstand heavy populations without damage. (Buxkemper).

GREENBUG (Schizaphis graminum) - NEW MEXICO - Increased in few fields of small grains near Tucumcari, Quay County. Elsewhere, no activity reported. (N.M. Coop. Rpt.). KANSAS - Alates on wing in Marion County. Trace populations noted on 4-inch sorghun in Labette County and on 25-inch Cherokee County wheat. None observed on wheat surveyed in Pottawatomie or Republic Counties. (Bell). TEXAS - Reported in grain sorghum in Karnes, Calhoun, Wharton, and Jackson Counties week ending May 9. Some light and scattered populations noted in some Hill County fields. Greenbug and Sipha flava (yellow sugarcane aphid) currently still light in Hill and Ellis Counties. Growers advised to frequently check sorghum. S. graminum heavy on Burnet County grain sorghum. S. flava decreased very rapidly in south-central area, primarily due to better growing weather and increased beneficial species. S. graminum decreased rapidly in south-central area due to increase in beneficial species and better growing weather. (Buxkemper et al.).

POTATO LEAFHOPPER (Empoasca fabae) - OHIO - First adults of season observed May 15 in Wayne County. (Flessel). WISCONSIN - Some scattered migrants detected in Grant County alfalfa. (Wis. Ins. Sur.).

POTATO PSYLLID (Paratrioza cockerelli) - ARIZONA - In several potato fields checked on west side of Salt River Valley in Maricopa County, no problem with this pest observed; potatoes making excellent progress. Hippodamia convergens (convergent lady beetle) averaged 5 per plant in one 40-acre field. (Ariz. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Ranged 15-20 per sweep of alfalfa near Artesia, Eddy County, and Roswell, Chaves County; honeydew much of a problem in some fields. Ranged 50-200 per 25 sweeps in Dona Ana County alfalfa. (N.M. Coop. Rpt.). KANSAS - Averaged 17 per sweep in 13-inch Republic County alfalfa. (Bell).

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - First to third-instar larvae observed in southern and central Coastal Plain. Infested tobacco plants ranged 25-30 percent in untreated fields in Bladen and Columbus Counties which have been set 24 or more days. (Reagan). ALABAMA - First and second-instar larvae ranged 60-70 per 100 tobacco plants in 10-acre Covington County field. Treatments applied. (Pike et al.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Pupation of overwintering larvae in Sussex County averaged about 75 percent, with 21 percent of adults now emerged. First adults of season collected in blacklight trap in area and first egg mass of season found on dock. (Burbutis). MARYLAND - Moths emerged in Dorchester, Wicomico, Somerset, and Worcester Counties. Numbers low and about 7-10 days later than 1974. Estimated 20 percent of moths emerged to date. Due to later emergence, damage to sweet corn and field corn may be well above normal during June. In previous years, most corn reached whorl stage after peak moth emergence. This may not be true this season. (U. Md., Ent. Dept.). ILLINOIS - No pupation noted in Champaign County. (Ill. Ins. Rpt.). NORTH DAKOTA - Winter mortality averaged 22 percent in untilled corn in Cass, Dickey, Ransom, Richland, and Sargent Counties. This is decrease from 42 percent mortality found in spring 1974. (School, LaChance).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - FLORIDA - Moth flights currently greatly reduced at Quincy, Gadsden County. Late-instar larvae more common on corn May 9. (Fla. Coop. Sur.).

BEET ARMYWORM (Spodoptera exigua) - FLORIDA - Heavily infested buds of one acre of 2-foot high, inadequately treated sweet corn at Belle Glade, Palm Beach County. Comprised 75 percent of population. S. frugiperda (fall armyworm) comprised other 25 percent of population. (Fla. Coop. Sur.).

CORN FLEA BEETLE (Chaetocnema pulicaria) - MARYLAND - Adults moderate to very heavy in newly emerged sweet corn. Counts ranged 2-3 per 1 to 2-inch corn plant in 300 acres in Caroline, Dorchester, and Wicomico Counties. (U. Md., Ent. Dept.). MISSOURI - Light to moderate in 6 of 10 cornfields in northeast area. Ranged 0.5-4.5 per plant on 2 to 4-inch corn. (Munson). KANSAS - Adults ranged from trace to 2 per plant on 2 to 8-inch corn (7 fields) in Kaw Valley in Shawnee County. Some activity on corn noted in Marion County. Damage light in all cases. (Bell).

SEEDCORN MAGGOT (Hylemya platura) - NEW MEXICO - Heavy in some sorghum fields in Curry County. Some reduction of seed germination expected. (N.M. Coop. Rpt.).

SMALL GRAINS

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Light, 1-8 per 10 sweeps, in most wheat checked in Logan, Kingfisher, Canadian, Grady, Cleveland, Garfield, and Garvin Counties. (Okla. Coop. Sur.). MISSOURI - Light, ranged 5-30 per row foot in wheat in northeast area. (Munson). TENNESSEE - This species and Rhopalosiphum padi light in small oatfield in Trousdale County. Collected April 17, 1975, by C. Webster. Determined by C.D. Gordon. These are new county records. Oats severely damaged by barley yellow dwarf disease. (Webster, Gordon).

RICE WEEVIL (Sitophilus oryzae) - FLORIDA - Adults fed on grain heads of wheat, barley, and rye in plant breeding nursery at agricultural research center at Quincy, Gadsden County. Damage light in field, but potential exists for much damage when grain stored and not treated. (Fla. Coop. Sur.).

WHEAT STEM MAGGOT (Meromyza americanum) - OKLAHOMA - Trace infestations (whiteheads) found in most wheat checked in Logan, Kingfisher, Grady, Canadian, and Garfield Counties. (Okla. Coop. Sur.).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - NEVADA - Larvae ranged from occasional specimens to 1-2 per sweep of alfalfa at Lovelock, Pershing County, except for 8-10 small larvae per sweep in one field. Eggs and 2-3 larvae per sweep present at Sparks, Washoe County. (Arnett). Eggs difficult to find, larvae ranged from occasional specimens to 1-2 per sweep in Fallon area, Churchill County. (Bechtel, Kirkpatrick). UTAH - Adults averaged one per sweep of alfalfa at Pleasant View and 6 per 10 sweeps at North Ogden, Weber County. Some mating observed. Very few larvae noted although alfalfa 6-9 inches tall. Larvae scarce in Cache County fields. (Davis, Knowlton). COLORADO - Eggs found in 10-15 percent of alfalfa stems examined in Larimer County, no larvae yet found. (Simpson).

NEW MEXICO - Alfalfa weevil larvae ranged 25-140 per 25 sweeps of alfalfa in San Miguel County during period May 9-15. Collected and determined by D.C. Heninger. This is a new county record. Larvae ranged 7-15 per 25 sweeps of alfalfa in Colfax County; 3-7 per 25 sweeps common in Chaves County. Conditions serious in Quay County; many fields badly damaged and treatments underway. (N.M. Coop. Rpt.). TEXAS - Populations observed on Hill County burr clover week ending May 9. Ranged moderate to heavy in alfalfa in Comanche and Erath Counties where no chemical treatments applied. Infestations also reported in Hale, Swisher, Bailey, and Lamb Counties. Weevils very active in infested Panhandle counties. Larvae remained light in alfalfa in Ward, Reeves, Pecos, and Midland Counties. Light terminal damage reported in Comanche County. (Hoelscher et al.). Current populations continued to cause problems on alfalfa in all High Plains counties. (Clymer).

OKLAHOMA - Alfalfa weevil larvae about disappeared in alfalfa in southwest counties, but still heavy in uncut alfalfa in Washita County; averaged 20 per 10 sweeps in Roger Mills County. Terminal infestations in new growth after first cutting ranged 5-10 percent in Tulsa and Kay Counties. Adults ranged up to 800 per 10 sweeps in Grady County; heavy feeding damage noted in some fields in Grady, Logan, Lincoln, and Kingfisher Counties. Adults averaged 20 per 10 sweeps in Roger Mills County; still heavy in some southwest area fields. (Okla. Coop. Sur.). KANSAS - Infestations still generally light in alfalfa in western third of State. More rapid growth resulted in less stunting and overall damage than in 1974. Spring oviposition appears lighter than 1974 or at least concentrated in time. Larval infestations in many untreated fields in northwestern counties of northeastern district and northeastern counties of north-central district remained fairly static during last 21 days. Foliar damage insignificant to date in some fields. Some badly damaged fields noted in western Washington and eastern Republic Counties. Eggs still hatching in all survey areas. Pupation underway as far north and west as Republic and Sheridan Counties. Some adult emergence noted in Sheridan County but not in other counties surveyed in northwest or central districts. First-generation adults heavy, 35 per sweep, in 20-inch Chautaugua County alfalfa. Some treating noted for first time in Nemaha, Marshall, and Washington Counties. Larvae nearing treatment thresholds in some alfalfa in southwest Sheridan, northeast Logan, and northwest Gove Counties. First alfalfa cutting well underway in southeast and south-central districts. (Bell).

NEBRASKA - Alfalfa weevil populations increased. Heaviest activity noted in southeast corner of State and in southern tier of counties as far west as Franklin County. (Keith). MISSOURI - Larval damage (tip feeding) 100 percent throughout northern areas. Larvae ranged 2-8 per plant. (Munson). IOWA - Larvae caused increased damage in southern area alfalfa. Treatments applied and/or early cutting underway. Damage highly variable. Larvae ranged from less than one to 4 per stem in Decatur County. Adults of Bathyplectes curculionis (an ichneumonid wasp) detected in Fremont County field; ranged 1-4 per sweep. (Iowa Ins. Sur.). MINNESOTA - Alfalfa weevil trace in Dakota and Rice Counties in about 30 percent of alfalfa surveyed. Alfalfa ranged 4-8 inches tall. (Minn. Pest Rpt.).

WISCONSIN - Some early instar alfalfa weevil larvae hatched from overwintered eggs collected in advanced southern areas. Field-collected eggs kept under natural conditions failed to develop and hatch; indicates overwintering mortality of fall-laid eggs very high. Adult activity increased, spring oviposition underway. Due to lush alfalfa growth and extremely light larval populations, significant damage seems unlikely except in rare fields. Larvae in southern counties averaged less than one per 50 sweeps. Adults averaged less than 2 per 50 sweeps throughout southern half of State. (Wis. Ins. Sur.). ILLINOIS - Economic throughout area south of line from Champaign County in east to Mercer County in west. North of this line, populations light and little economic damage expected in 1975. Alfalfa being cut in southern part of State. (Ill. Ins. Rpt.).

OHIO - Alfalfa weevil larval surveys made in 7 west-central counties May 13 and 14. Larval averages per 100 sweeps of alfalfa ranged from 20 in Logan County to 217 in Auglaize County. Percent damaged alfalfa tips ranged 10-50; average larval counts per stem ranged 0.5-2.2. Larvae in first to third instars, no fourth stage found. (Lewis, Leibee). In Clarke County, larvae averaged 21 per 100 sweeps in 17-inch alfalfa, damaged tips 2 percent. On same date in 1974, alfalfa in same field 17 inches tall, larvae averaged 354 per 100 sweeps. If cool weather continues, first cutting of alfalfa will probably occur before economic threshold reached and controls required. (Horn). Larvae averaged 4.5 per 100 sweeps of 12-inch alfalfa May 9 in Wayne County. (Lewis).

KENTUCKY - Alfalfa weevil eggs averaged 9.2 per square foot April 30, 9.9 May 7, 16.8 May 12, and 5.4, 9.2, and 2.8 per square foot May 15 in Fayette County. (Barnett, Parr). TENNESSEE - Larval counts made in 5 counties May 7-9 and May 13. Number of larvae per 50 tips by county: Tipton (2 fields) 1, Dyer 18, Giles 5, Sumner 61, Chester 1. Number of tips infested per 50 tips examined: Tipton (2 fields) 1, Dyer 18, Chester 1. Number of tips damaged per 50 tips examined: Tipton (2 fields) 3, Dyer 20, Chester 7. First cutting of alfalfa hay occurred in central and eastern areas. (Jackson et al.).

VIRGINIA - Based on 9 alfalfa fields sampled (72.9 acres) in 7 counties, 75 percent of tips infested with alfalfa weevil larvae. Average estimated defoliation 36.3 percent. Larvae large enough to cause serious damage. Seven fields (78 percent of sample) exceeded economic threshold of infestation (25 of 50 tips infested); 75 percent of acreage exceeded economic threshold this period. (Allen). MARYLAND - Moderate to heavy on alfalfa in Washington, Frederick, Carroll, and parts of Prince Georges and Montgomery Counties. First heavy populations (70-80 percent of tips injured) within past 5 years currently reported in Prince Georges and St. Marys Counties. In southern counties, only light infestations reported previous 5 years. Populations above normal in southern counties and Baltimore, Harford, and Howard Counties this season. About 7,000 acres sprayed in southern and central areas. Damage levels peaking in these areas and not expected to continue beyond next period. (U. Md., Ent. Dept.).

PEA APHID (Acyrthosiphon pisum) - OHIO - Counts per 100 sweeps of alfalfa by county: Logan 5.5, Auglaize 14, Shelby 1, Darke 17, Mercer 160, Champaign 3, Miami 4. (Lewis, Leibee). MICHIGAN - Counts light in alfalfa. Growers should check clovers. (Ruppel et al.). TEXAS - Moderate to heavy buildup reported in Comanche County week ending May 9. Infestations light to heavy in most alfalfa fields in Pecos, Reeves, and Ward Counties, ranged 5-20 per sweep. Currently light to moderate in alfalfa in Ward and Reeves Counties. (Curtis, Neeb). NEW MEXICO - Ranged 20-30 per sweep of alfalfa in Chaves, Eddy, and Dona Ana Counties. Parasite activity very heavy in Artesia and Roswell areas of Eddy and Chaves Counties, adults of Aphidius sp. (a braconid wasp) ranged 15-25 per sweep. Parasite activity not noted in Dona Ana County. (N.M. Coop. Rpt.). UTAH - A. pisum averaged 2 per 10 sweeps in alfalfa at Pleasant View, Weber County. Alfalfa 6-9 inches tall. (Knowlton, Davis).

NEVADA - Counts of Acyrthosiphon pisum and Acyrthosiphon sp., loti group, averaged 300 per sweep of alfalfa hay in Virgin Valley, Clark County; population 85 percent loti group. Lady beetle adults heavy, up to 30 per sweep, in these fields; chemical controls not contemplated. Aphid counts averaged 200 per sweep of alfalfa hay in Moapa Valley, Clark County; 84 percent loti group. Counts generally ranged from occasional specimens to 0-5 per sweep of alfalfa hay in Fallon area, Churchill County, except for average of 40 per sweep in 2 fields south of Fallon; population 46 percent loti group. Counts of 50-125 aphids per alfalfa crown reported as pea aphid in CEIR 25(20):390 found to be 52 percent loti group. (Bechtel et al.). A. pisum ranged from occasional specimens to 1-2 per sweep on alfalfa for hay and seed at Lovelock, Pershing County. (Arnett). Acyrthosiphon sp., loti group, collected from alfalfa at Smith Valley, Lyon County, May 8, 1975, by R.C. Bechtel, C.W. Clark, and J.H. Pursel. Determined by R.C. Bechtel. Confirmed by T. Kono. Also collected from alfalfa at Fallon, Churchill County, May 14, 1975, by R.C. Bechtel and H.M. Kilpatrick. Determined by R.C. Bechtel. These are new county records. (Bechtel).

AN APHID (Acyrthosiphon sp.) - ARIZONA - This apparent new pest in loti group believed to be present in practically every alfalfa-growing county in State. Damage has been reported to alfalfa. (Ariz. Coop. Sur.).

VARIEGATED CUTWORM (Peridroma saucia) - KANSAS - Larvae heavy in Washington County alfalfa field; could prevent regrowth after cutting. Larvae averaged 3 per square foot in cut field in Cherokee County. Trace populations noted in alfalfa in Republic, Cloud, and Clay Counties. (Bell). OKLAHOMA - Larvae ranged up to 35 per 10 sweeps in alfalfa in Grady County; common in Logan, Lincoln, Kingfisher, and Payne Counties. (Okla. Coop. Sur.). ARKANSAS - Infestations reported in some eastern area alfalfa fields week ending May 9 should be watched. (Boyer).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - NEW MEXICO - Thrips, mostly this species, and undetermined spider mites caused much mottling and chorosis in alfalfa near Las Cruces, Dona Ana County. Mites should be watched, particularly in fields near seedling cotton. (N.M. Coop. Rpt.).

BROWN WHEAT MITE (Petrobia latens) - NEVADA - Ranged 2-5 per sweep on seed alfalfa at Jungo, Humboldt County. Heavy, spotted infestations which caused yellowing of alfalfa at Fallon, Churchill County, controlled by irrigation. (Stitt et al.).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Adults ranged 1-2 per 5 row feet in 50-acre soybean field in Monroe County. Observations past 21 days indicate excessive population of this species and Cerotoma trifurcata (bean leaf beetle) at one per 5 row feet in same field, poses potential threat to soybeans, snap beans, and lima beans. (Gamble et al.).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - ALABAMA - Adults observed in large Monroe County soybean field, treatments applied. (Gamble, House).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - Activity ranged absent to light week ending May 9. No adults or punctured squares noted in central Hidalgo, eastern Willacy, or northern Cameron Counties. Adults and punctured squares light in all cases. Current activity very light in most all Rio Grande Valley area fields. No weevils trapped to date. Only isolated cases of activity reported in fields. Very few punctured squares and few adults reported. Up to 700 per acre reported from Batesville area, Zavala County. Overwintering specimens taken in Calhoun and Ft. Bend Counties. (Norman et al.). ALABAMA - Unusually heavy population noted entering fields in Covington, Monroe, Dallas, Autauga, Montgomery, and Macon Counties compared to past 10 years for corresponding dates. Counts generally ranged 30-2,400 per acre along field borders. Feeding signs on buds on 1 to 4-leaf stage plants general and more excessive than in most years. Heaviest populations noted at 2,300 per acre on Montgomery County farm and 2,340 per acre on Macon County farm. (McQueen).

BOLLWORM (*Heliothis zea*) - TEXAS - Larval infestations ranged 0-15 percent with up to 10 percent damage noted in isolated cotton fields in Rio Grande Valley. Only very few fields treated. Egg counts ranged up to 16 percent. Oviposition expected next 5 days. (Deer, Norman). NEW MEXICO - Moths (3) emerged in cage traps at Las Cruces, Dona Ana County. See light trap collections page 421. (N.M. Coop. Rpt.).

COTTON FLEAHOPPER (*Pseudatomoscelis seriatus*) - TEXAS - Ranged moderate to heavy in central Hidalgo County and most all of Willacy County week ending May 9. Light to moderate in Cameron County, some heavy infestations noted. Currently still present in most Rio Grande Valley fields; very heavy in some isolated fields. Averaged 2 per plant in parts of some fields in very isolated locations, heavy populations noted feeding on very large squares. Ranged none to light in all other Rio Grande Valley fields. (Norman, Deer).

BANDEDWING WHITEFLY (*Trialeurodes abutilonea*) - ALABAMA - Adults numerous in all fields checked in Covington, Monroe, Dallas, Autauga, Montgomery, Macon, and Elmore Counties. (Pike et al.).

SUGAR BEETS

GREAT BASIN WIREWORM (*Ctenicera pruinina*) - IDAHO - Severely damaged spots noted May 12 in field near Kuna, Ada County. (Hall, Baird).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - VIRGINIA - Overwintered adults emerged on Eastern Shore and laid eggs; adult counts heavy. This in contrast to 1974 when many first-brood larvae had completed growth by this time and entered soil to pupate. As of May 14, none of egg masses at Painter, Accomack County, had hatched. (Hofmaster). RHODE ISLAND - Adult emergence in potato fields noted May 15 in Washington County. (Partyka).

PEPPER WEEVIL (*Anthonomus eugenii*) - FLORIDA - Caused about 20 percent of bell peppers to drop to ground in small commercial planting at South Bay, Palm Beach County. All dropped fruit infested. (Fla. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - RHODE ISLAND - Adults emerged May 15 in Washington County potato fields. (Partyka).

BEANS AND PEAS

PEA LEAF WEEVIL (*Sitona lineatus*) - IDAHO - Some early peas not damaged, but peas required treatment in Pullman and Colton areas of Whitman County and in Washington and Lewiston areas of Nez Perce County. Some black peas virtually destroyed and others severely damaged by May 14 in Lewis County. (O'Keeffe, Kambitsch).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - ALABAMA - Damaged 10 acres of snap beans and lima beans in Escambia County. Treatments applied. Snap beans and lima beans damaged in many home gardens in Houston, Covington, Monroe, Montgomery, Autauga, and Lee Counties. Treatments general throughout area. (Knowles et al.).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - TENNESSEE - Damaged peas in western area. (Burgess).

PEA APHID (*Acyrthosiphon pisum*) - WISCONSIN - Populations throughout southern half of State very light, seldom more than 15 per 50 sweeps. Reproduction underway. Parasitism by braconid wasps relatively high in western counties, with 15-40 percent of aphids parasitized. No aphid alates detected and no colonies found in young peas. (Wis. Ins. Sur.).

COLE CROPS

CABBAGE FLEA BEETLE (*Phyllotreta cruciferae*) - OREGON - Adults noted at 2 per 10-12 broccoli plants in 25-acre field near Cornelius, Washington County. Moderate feeding evident. Plants in 2-true-leaf stage. (Collins).

CABBAGE SEEDPOD WEEVIL (*Ceutorhynchus assimilis*) - WASHINGTON - Adults active in western area seed cabbage fields; on flowers and flower buds. No oviposition noted by May 13. (Getzin, Harwood).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - WASHINGTON - One male trapped in 14 pheromone traps in lower Yakima Valley, May 5. Single male trapped in West Wapato, Yakima County, May 8. (Gregorich et al.). IDAHO - First adult of season taken May 14 in pheromone trap near Emmett, Gem County. Red Delicious apples in full bloom. (Johannesen). OHIO - Two male moths caught in pheromone traps May 6-13 in Wayne County. These are first reported catches of season. (Hall).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - MICHIGAN - Moth emergence began last period, pheromone trap catches averaged 11 at Watervliet, Berrien County, and 9 at Douglas, Allegan County. (Olsen, Nichols). WASHINGTON - Total of 118 males taken in 19 pheromone traps in peaches in Parker and West Wapato area, Yakima County, week ending May 5. Averaged 6 (range 0-35) per trap. (Johnson, Hudson).

FRUITTREE LEAFROLLER (Archips argyrospilus) - MICHIGAN - Larvae found near Berrien Springs, Berrien County, May 12 and some second-instar larvae found May 13 near Coopersville, Ottawa County. (Olsen et al.).

REDBANDED LEAFROLLER (Argyrotaenia velutinana) - MICHIGAN - Moth flight decreased at Fennville, Allegan County; peaking at Grand Rapids, Kent County; not yet peaked at Hart, Oceana County. Egg masses laid in southwest last period and at Fennville May 9; no hatch reported by May 14. (Olsen et al.).

GREEN FRUITWORM (Lithophane antennata) - MICHIGAN - Larvae found feeding on apples May 10 near Coopersville, Ottawa County, and May 13 in Mason County. Damage heavy near Douglas, Allegan County, May 14. (Olsen et al.).

BLACK PEACH APHID (Brachycaudus persicae) - CALIFORNIA - Infested peach trees at La Jolla, San Diego County; up to 500 per leaf noted. (Cal. Coop. Rpt.).

PEAR PSYLLA (Psylla pyricola) - RHODE ISLAND - First emergence and oviposition of season noted in Providence County pear orchards May 16. (King). MICHIGAN - Nymphs common on pear in southwest area. Eggs hatched May 14 at Sparta, Kent County. (Olsen). WASHINGTON - First nymphal instars and first summer-generation adults seen on pears at calyx stage in Parker area, Yakima County, May 7. Nymphs also observed in Buena May 7. (Johnson et al.).

CALIFORNIA PEARSLUG (Pristiphora abbreviata) - WASHINGTON - Eggs hatched, larvae seen on pears in full bloom at Prosser, Benton County, May 7. Larvae observed on Bartlett pears at Zillah, Yakima County, May 10. (Eves et al.).

EUROPEAN RED MITE (Panonychus ulmi) - OHIO - Egg hatch 90 percent complete by May 9 in Fairfield County. On Red Delicious apples in full bloom and not sprayed, 2,400 larvae and protonymphs on leaves of 20 fruit clusters (about 9 leaves per cluster). (Holdsworth). In Wayne and Ashland Counties, egg hatch 90 percent complete by May 12. (Hall). MICHIGAN - Immatures found on apple May 10 at Watervliet, Berrien County; heavy near Fennville, Allegan County, May 14. Immatures averaged 10 per leaf May 14 at Sparta, Kent County. (Olsen et al.). WASHINGTON - First nymphs observed on pears at Prosser, Benton County, May 7. (Chandler et al.).

PECAN NUT CASEBEARER (Acrobasis caryae) - TEXAS - Larvae observed tunneling in developing pecan shoots in Reagan and Upton Counties week ending May 9. Producers advised to begin egg survey. Oviposition expected soon. Treatments should be made when eggs hatching. Adult emergence spread out this season and two applications will be needed for adequate control. Insecticide treatments in San Angelo area should be applied. Populations in Uvalde area ranged 15-20 percent clusters with eggs. Several egg clusters punctured in Uvalde and Hondo areas and also in Kinney County. Spray dates set for May 8-13. (Thomas).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - TEXAS - This species and M. disstria (forest tent caterpillar) moderate to heavy on Hamilton County pecans week ending May 9. Caused much damage to tree foliage, treatments considered. (Hoelscher).

PECAN SPITTLEBUG (Clastoptera achatina) - MISSISSIPPI - Spittle masses heavy in commercial pecan orchards in Quitman, Coahoma, and Lowndes Counties. Some trees noted with up to 20 spittle masses per tree. (Robinson).

PECAN LEAF PHYLLOXERA (Phylloxera notabilis) - MISSISSIPPI - Heavy on Pike County pecans. (Cochran).

SMALL FRUITS

A TORTRICID MOTH (Choristoneura parallela) - ALABAMA - Larvae damaged commercial strawberry planting in Chilton County. Collected by B. Futural March 16, 1975. Determined by D.M. Weisman. This is a new State record. (McQueen).

ROSE STEM GIRDLER (Agrilus aurichalceus) - IDAHO - Damaged raspberry canes near Clifton, Franklin County. Collected September 6, 1973, by G.F. Knowlton. Determined by D.R. Davis. This is a new State record. (Homan).

A WEEVIL (Ampeloglypter ater) - MISSISSIPPI - Damaged grapes in Alcorn County. Girdling of stems heavy. (Parrott).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - OREGON - Survey of 400 acres of strawberries at scattered locations in western Washington County indicated 200 acres needing treatment. Infestations generally ranged from 10-12 on bottom old leaves, none on new leaves to 10-15 on bottom leaves and 3-4 mites on upper leaves. (Collins).

ORNAMENTALS

A THAUMASTOCORID BUG (Xylastodoris luteolus) - FLORIDA - All stages caused serious damage to many royal palms (Roystonea regia) in Dade, Broward, Palm Beach, Collier, Lee, and Hendry Counties. Yellowing to palms in many instances blamed on lethal yellowing, minor element deficiency, and drought, rather than this species. (Fla. Coop. Sur.).

AN ARMORED SCALE (Diaspidiotus liquidambaris) - FLORIDA - Taken on Liquidambar styraciflua in nursery at Live Oak, Suwannee County, May 6, 1975. Collected by C.H. Webb. Determined by G.W. Dekle. This is a new county record. (Fla. Coop. Sur.).

AN ARMORED SCALE (Aonidiella taxus) - FLORIDA - Adults collected on Podocarpus sp. at nursery in Live Oak, Suwannee County, May 6, 1975, by C.H. Webb. Determined by G.W. Dekle. This is a new county record. (Fla. Coop. Sur.).

GREEN SHIELD SCALE (Pulvinaria psidii) - CALIFORNIA - Infested Ficus benjamina nursery stock in Sacramento nursery, Sacramento County. Eggs and adults present on very few trees in 15-gallon containers. This is eradication pest and treatment underway. Collected by C. Mellor and M. Scribner. Determined by R. Gill. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

SPRUCE BUDWORM (Choristoneura fumiferana) - MAINE - Larvae active and mining in needles and buds of spruce and fir statewide. Most in second instar although collections at Windsor, Kennebec County, and Waldoboro, Lincoln County, showed 6 percent in third instar. If present weather continues, development expected to be rapid, and treatment of Christmas trees and ornamentals should begin soon. In some eastern plantations all larvae in third instar and single fourth-instar larva noted. (Gall).

BAGWORM (Thyridopteryx ephemeraeformis) - ALABAMA - Newly hatched larvae heavy, noted at 200 per tree on several 8-foot tall cedar trees at Somerville, Morgan County. (Cain, Wilson).

ENGRAVER BEETLES (Ips spp.) - TENNESSEE - Damaged pines in isolated areas in central and eastern parts of State. Infestations normally occur after trees in weakened condition. (Chance, Mullett).

WHITE PINE WEEVIL (Pissodes strobi) - RHODE ISLAND - Oviposition underway on ornamental conifers by May 16. (King).

BALSAM TWIG APHID (Mindarus abietinus) - MAINE - Active in Augusta area, Kennebec County, on expanding fir buds. Treatments should be applied now in most southern and central areas to prevent damage. (Gall).

ELM LEAF BEETLE (Pyrrhalta luteola) - MICHIGAN - Adults active on elms in Lansing area, Ingham County. (Mosher). KANSAS - Some eggs hatched at Manhattan, Riley County. Eggs observed but none reported hatching at Rossville, Shawnee County, or in Butler County. (Bell). IDAHO - First adults of season appeared May 15 in Parma area, Canyon County, following few days of warm weather. (Waters). NEVADA - Overwintered adults emerged, heavy populations feeding on elms at Reno, Washoe County; no eggs observed. (Ting).

EASTERN TENT CAPERPILLAR (Malacosoma americanum) - MICHIGAN - Tents becoming numerous in Newaygo County and in Rose Lake area of Shiawassee County. (Mosher).

WESTERN TENT CAPTERPILLAR (Malacosoma californicum) - WASHINGTON - Tents heavy in Seattle area, King County. Indications are that heavy infestations will occur in some areas. (Collman).

EUROPEAN ELM SCALE (Gosspyaria spuria) - COLORADO - Nymphs active on elm trees in Pueblo area, Pueblo County. (Fitzsimmons).

BLACKHEADED ASH SAWFLY (Tethida cordigera) - TENNESSEE - Second and third-instar larvae fed heavily on ash trees in Trousdale County. Populations heavy where infestations present, treatments applied. (Webster).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 102 cases reported from continental U.S. during period May 4-10 as follows: Texas 95, Arizona 4. Total of 154 cases confirmed from Mexico. Number of sterile flies released in U.S. this period totaled 80,275,800 as follows: Texas 75,865,800; New Mexico 694,800; Arizona 3,715,200. Total of 54,039,900 sterile flies released in Mexico. (Vet. Serv.).

NORTHERN CATTLE GRUB (Hypoderma bovis) - KENTUCKY - Larvae averaged 2 per animal on backs of 25 Holstein dairy cows of various ages in Fayette County. (Barnett).

HORN FLY (Haematobia irritans) - TEXAS - Infestations increased in Falls, Navarro, and Hill Counties week ending May 9. Populations also increased throughout San Angelo area, Tom Green County. Moderate to heavy populations of 400-1,000 per animal noted on cattle in Brewster, Jeff Davis, Pecos, Upton, Reagan, and Glasscock Counties. (Hoelscher et al.). Currently, infestations increased in Archer, Baylor, Clay, and Wilbarger Counties. Heavy in Knox and Shackelford Counties. Increased on cattle in Panhandle area. Moderate to heavy, ranged 400-1,200 per animal, on cattle across Trans-Pecos area. (Boring et al.). MISSISSIPPI - Averaged 200+ per head on 500 beef cattle checked in Oktibbeha County. (Robinson).

FACE FLY (Musca autumnalis) - MISSISSIPPI - Averaged 3 per head on herd of 50 cows in Oktibbeha County, 1 per face on 200 cattle in Noxubee and Winston Counties. (Robinson). OKLAHOMA - Averaged 5 per head on herd of Cherokee County cattle May 5; first report of season. About 30 percent of herd with pinkeye. Ranged 3-5 per head in Pawnee County 0.5 mile north of county line on State Highway 18 May 12, averaged 2 per head in Perkins area, Payne County, May 14. Collected and determined by J.A. Hair. Payne and Pawnee are new county records. (Okla. Coop. Sur.).

MOSQUITOES - MAINE - Pupation noted in central area. Adults expected within 7 days. This in addition to overwintered adults. (Gall). OHIO - Aedes canadensis and A. cinereus adults emerged in Summit County. (Ohio Dept. of Health). NEVADA - Aedes dorsalis and A. nigromaculis adults moderate to heavy east of Fallon, Churchill County. (Bechtel, Kirkpatrick). Anopheles freeborni adults heavy south of Reno and Sparks area in Washoe County. (Minedew).

AMERICAN DOG TICK (Dermacentor variabilis) - OKLAHOMA - Ranged up to 100 per head on cattle checked in one Pawnee County area. (Okla. Coop. Sur.). WISCONSIN - Annoyance severe to workers in wooded areas of Langlade County. Light to moderate annyoyance to humans occurred in wooded areas of Polk, La Crosse, Adams, Washburn, and Chippewa Counties. (Wis. Ins. Sur.). MISSISSIPPI - This species and Rhipicephalus sanguineus (brown dog tick) increased rapidly statewide. Many dogs allowed to roam in grassy areas had 50-100 ticks per animal. (Norment). WEST VIRGINIA - Heavy in Monongalia County, annoyed pets and humans May 2. (Butler).

EAR TICK (Otobius megnini) - TEXAS - Light on cattle in Schleicher, San Saba, and Nolan Counties week ending May 9. Infestations also noted on sheep and goats in San Saba County. (Thomas).

GULF COAST TICK (Amblyomma maculatum) - OKLAHOMA - Heavy in ears of calves in one area of Noble County. Also reported in Pawnee County. (Okla. Coop. Sur.).

BENEFICIAL INSECTS

A BRACONID WASP (Microctonus aethiops) - OHIO - One adult female emerged from sample of 30 Hypera postica (alfalfa weevil) adults collected March 22, 1975, in Hancock County. Collected and determined by D.L. Lewis. This is a new county record. This braconid wasp has not been released within 50 miles of recovery site. This is third county in State in which M. aethiops has been recovered. (Lewis). Report of recovery of M. colesi in CEIR 25(15):291 is in error. Second line from bottom of page should read M. aethiops. (PPQ).

A EULOPHID WASP (Tetrastichus julis) - MICHIGAN - One male of this larval parasitoid of Oulema melanopus (cereal leaf beetle) recovered in emergence trap May 19 in Berrien County. (PPQ).

AN ICHNEUMONID WASP (Lemophagus curtus) - One female of this larval parasitoid of Oulema melanopus (cereal leaf beetle) recovered in emergence trap May 15 in Berrien County. (PPQ).

A MYMARID WASP (Anaphes flavipes) - OHIO - This egg parasitoid of Oulema melanopus (cereal leaf bettle) recovered in Union and Deerfield Townships of Ross County May 9 by J. Wheeler and D. Reckner; in Bearfield Township of Perry County May 16 by P. Shipman. WEST VIRGINIA - Recovered in Williams Magistral District of Wood County May 5 by A. Tustin. PENNSYLVANIA - Recovered May 13 in Tyron Township and May 15 in Antis Township of Blair County by K. Kadow. This is a new county record. (PPQ).

HONEY BEE (Apis mellifera) - RHODE ISLAND - First swarm of season observed May 15 in Kent County. (Wilder). OHIO - Weather favorable and colonies continued to expand statewide. Some early swarming reported. Ground moisture continued adequate (Cottrel).

A WEEVIL (Ceutorhyncus litura) - WASHINGTON - This European species released near Prosser, Benton County, July 31, 1974, under cage for control of Canada thistle. Reproduction occurred as of May 14, 1975. (Klostermeyer).

GREEN LACEWINGS (Chrysopa spp.) - OKLAHOMA - Heavy in wheat in Jackson and Tillman Counties. (Okla. Coop. Sur.).

PHYTOSEIID MITES - OHIO - Overwintered Zetzelia mali adult females averaged 44 per 40 fruit clusters on Red Delicious apples in

Fairfield County; fed on Panonychus ulmi (European red mite). No reproduction of Z. mali noted. Amblysieus fallacis that overwintered under bark scales of apple in Licking County have moved to foliage; fed on P. ulmi. This is earliest, by 30 days, A. fallacis found on foliage in central area. (Holdsworth).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CEREAL LEAF BEETLE (Oulema melanopus) - PENNSYLVANIA - During period May 5-9, adults ranged 0-19 per 100 sweeps in wheat, oats, and grass in 19 counties. Eggs ranged 0-14 per 10 row feet. (Jackowski et al.). WEST VIRGINIA - Eggs per square foot in oats May 13 averaged as follows by county: Monroe 4, Pleasants 54, Wood 3, Mason 2, Jackson 2 (May 14). Larvae averaged 12 per square foot in oats in Pleasants County May 13. (Tustin et al.). VIRGINIA - First overwintered adults of season observed in Augusta County winter wheat April 29. (Surles). KENTUCKY - Egg counts based on 20 one-foot-square samples in each field by county, as follows: Shelby 0.1-0.2 in spring oats, 1.15 in barley, Nicholas 1.5-2.6 in spring oats. Counts in spring oats indicate increase over previous period. (Barnett). OHIO - Cereal leaf beetle adults ranged 28-32 per 100 sweeps on 4-inch oats in Ross County May 4; about 28 eggs per square foot observed though feeding damage not detected. (Reckner). Eggs per square foot of oats by county surveyed: Fairfield 1, Portage and Geauga 2-10 (average 2.5), Ross 0-8, Perry 80-100. Egg hatch just beginning in Ross and Perry Counties. Larvae from high egg population in Perry County expected to cause extensive damage. Adults per 100 sweeps averaged 20 on oats in Fairfield County, ranged 2-3 on wheat in Portage and Geauga Counties. (Kruise et al.). Adult surveys negative in all but 3 of 14 fields of oats and wheat examined in 8 west-central counties. Counts where infestations detected and adults per 100 sweeps: Union 0.5 (oats), Auglaize 1 (oats and wheat). No eggs observed in any of these 14 fields. (Lewis).

GRASSHOPPERS - NORTH DAKOTA - Percent egg development by county as follows: Stark - 21 coagulated, 60 eye spot, 14 segmented, 5 percent destroyed by bee fly larvae; Bowman - 16 coagulated, 53 eye spot, 21 segmented, 10 percent destroyed by wireworms; Golden Valley - 38 coagulated, 52 eye spot, 10 segmented; Sheridan - 90 eye spot, 10 segmented. (Brandvik, Winks). OKLAHOMA - First to third-instar nymphs of Ageneotettix deorum, Amphitornus coloradus, and Melanoplus spp. ranged up to 10 per square yard on rangeland in some areas of Major Woodward, Woods, and Harper Counties. (Okla. Coop. Sur.).

GYPSY MOTH (Porthetria dispar) - MAINE - Populations appear light this season in most areas surveyed. Egg hatch to date noted only at Fryeburg, Oxford County, and Winslow, Kennebec County. (Gall). RHODE ISLAND - Larvae moved off egg masses by May 14 and began feeding early in Kent and Washington Counties. (Hannah, Gardner). MICHIGAN - Egg hatch observed at Cedar Lake and Vestaburg, Montcalm County, May 12. (Smith).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Single male trapped in Panorama City, Los Angeles County, September 7, 1974. Male annihilation program initiated immediately. Trapping program monitored eradication results for negative findings, which must extend for 3 generations (120 days). First larval infestation of this fruit fly that has occurred on U.S. mainland, detected September 6, 1974, in Clairemont, San Diego County. Male and female annihilation programs were initiated immediately. The last fly was trapped in San Diego January 21, 1975. Pending no further finds, this pest is considered eradicated as of May 21, 1975. (PPQ).

RED IMPORTED FIRE ANT (Solenopsis invicta) - TEXAS - Specimens taken from grass at Hearne, Robertson County, January 30, 1975, and at Normangee, Leon County, January 31, 1975, by T. Williamson. Taken from sod at Lockhart, Caldwell County, January 29, 1975, by F. Gellermann. All collections determined by D.R. Smith. These are new county records. (Gellermann, Williamson).

WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus) - FLORIDA - Few adults taken in same nursery at Davie, Broward County, that has been infested for some time. Collected from Cupressus sempervirens, Citrus sinensis, Litchi chinensis, and Brassaia actinophylla May 12 by K.L. Tyson and R.L. Chavez. Adults collected from yaupon (Ilex vomitoria) at a nursery at Zellwood, Orange County, May 13, 1975, by H.W. Collins, J. Scott, and C. Allen. This is a new host for this weevil. (Fla. Coop. Sur.).

HAWAII INSECT REPORT

Vegetables - ONION THRIPS (Thrips tabaci) infestations and damage heavy on green onions and broccoli at Ewa, Oahu. Damage very noticeable in most backyard gardens surveyed; 4-6 thrips found per sampled stalk. Numerous nymphs and adults on older broccoli leaves, feeding damage covered most of underside of leaves. All stages of CARMINE SPIDER MITE (Tetranychus cinnabarinus) heavy, 20+ per square inch, in small plantings of sweetpotato and eggplant at Waianae, Oahu. Mite populations appear to be increasing as damage only light. Infestations also light in small bell pepper plantings in same area; counts averaged less than 3 mites per square inch. Infestations near nil on similar crops at Ewa. TOBACCO FLEA BEETLE (Epitrix hirtipennis) damage heavy on eggplant foliage at Ewa; 2-3 adults per leaf found in most cases. About 60 percent of leaf surface destroyed. (Mau).

Fruits and Ornamentals - BROAD MITE (Polyphagotarsonemus latus) moderate on chrysanthemum blossoms at Waianae, Oahu; damage heavy and very noticeable. Less than one percent of potted chrysanthemums infested. No foliage damage observed. General survey for CITRUS SWALLOWTAIL (Papilio xuthus) in parts of Waipahu, Pearl City, Halawa, and Nuuanu indicated light populations. While all stages found in these areas, appreciable numbers of eggs and larvae found only at Waipahu. Estimated 50 percent of eggs collected at Waipahu were parasitized. Very little flush growth observed on citrus. (Kumashiro).

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation (inches)	Type of trap BL = blacklight I = incandescent MV = mercury vapor O = other	*Agrotis ipsilon* (black cutworm)	*Estigmene acrea* (saltmarsh caterpillar)	*Euxoa auxiliaris* (army cutworm)	*Faronta diffusa* (wheat head armyworm)	*Feltia subterranea* (granulate cutworm)	*Heliothis virescens* (tobacco budworm)	*H. zea* (bollworm, tomato fruitworm, corn earworm)	*Laspeyresia pomonella* (codling moth)	*Loxostege commixtalis* (alfalfa webworm)	*Loxostege rantalis* (garden webworm)	*Loxostege sticticalis* (beet webworm)	*Manduca quinquemaculata* (tomato hornworm)	*Manduca sexta* (tobacco hornworm)	*Ostrinia nubilalis* (European corn borer)	*Peridroma saucia* (variegated cutworm)	*Pseudaletia unipuncta* (armyworm)	*Spodoptera exigua* (beet armyworm)	*Spodoptera frugiperda* (fall armyworm)	*Spodoptera ornithogalli* (yellowstriped armyworm)	*Trichoplusia ni* (cabbage looper)	Crops
ARIZONA																								
Mesa 5/5-11			BL	35		16				1								74		54		10	6	
FLORIDA																								
Gainesville 5/9-15			BL	2	6			139		2									1	1		4		
KANSAS (Counties)																								
Barton 5/8-13			BL	15		985												157	666			4		
Riley 5/15			BL	1		1												9	25					
KENTUCKY (Counties)																								
Madison 5/9-12			BL	3														2	48					
Fayette 5/9-16			BL																18				2	
MICHIGAN (County)																								
Lenawee 5/6-12			BL															6	33					
MISSISSIPPI																								
Stoneville 5/9-15	57-83	2.81	2BL	43				10	15	11								17	97			15		
MISSOURI (County)																								
Douglas 5/1-14			BL	75						6								24	206			7		
NEW MEXICO																								
Las Cruces 5/9-16			4BL	13		486				18						42		16	17	14				
OHIO																								
Wooster 5/10-16			3BL	3														3	129					
PENNSYLVANIA (Districts)																								
Central 5/3-12			BL	10															22					
North East 5/3-12			BL																2					
TENNESSEE (Counties)																								
Madison 5/8-14			BL	5														1	15					
Hardeman 5/8-14			BL	4													2		29					
WEST VIRGINIA (Counties)																								
Kanawha 5/15			BL																14				1	
Randolph 5/15			BL	2														1	5					

DETECTION

New United States Records - Four APHIDS from moss, *Aspidaphium escherichi* (p. 424), *Decorosiphon corynothrix* (p. 425), *Muscaphis stammeri* (p. 426), and *Pseudacaudella rubida* (p. 427).

New State Records - ROSE STEM GIRDLER (*Agrilus aurichalceus*) - IDAHO - Franklin County. (p. 415). A TORTRICID MOTH (*Choristoneura parallela*) - ALABAMA - Chilton County. (p. 415).

New County Records - ALFALFA WEEVIL (*Hypera postica*) NEW MEXICO - San Miguel (p. 408). AN APHID (*Acyrthosiphon* sp., *loti* group) NEVADA - Lyon, Churchill (p. 411). AN APHID (*Rhopalosiphum padi*) TENNESSEE - Trousdale (p. 408). ARMORED SCALES (*Aonidiella taxus*, *Diaspidiotus liquidambris*) FLORIDA - Suwannee (p. 416). A BRACONID WASP (*Microctonus aethiops*) OHIO - Hancock (p. 418). ENGLISH GRAIN APHID (*Macrosiphum avenae*) TENNESSEE - Trousdale (p. 408). FACE FLY (*Musca autumnalis*) OKLAHOMA - Payne, Pawnee (p. 417). A MYMARID WASP (*Anaphes flavipes*) WEST VIRGINIA - Blair (p. 418). RED IMPORTED FIRE ANT (*Solenopsis invicta*) TEXAS - Caldwell, Leon, Robertson (p. 420).

CORRECTIONS

CEIR 25(8):81, 82 - WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus) - FLORIDA - Delete Dade County as a new county record. The 3 collections were all from same nursery at Goulds. All specimens taken from container-grown stock originating from known-infested nursery at Davie, Broward County. There was no established infestation at the Dade County nursery. This is considered to be an in-State interception. All intercepted plants were destroyed. (Woodruff; PPQ).

CEIR 25(15):291 - Second line from bottom of page: Microctonus colesi should read Microctonus *aethiops*.

CEIR 25(16):323 - LIGHT TRAP COLLECTIONS - "ARIZONA ... VARIEGATED CUTWORM (Feltia subterranea) ..." should read "ARIZONA ... VARIEGATED CUTWORM (Peridroma saucia) ..." (PPQ).

CEIR 25(16):322 - HAWAII INSECT REPORT. Miscellaneous Pests " ... a NOCTUID MOTH (Leucania loryei) ..." should read "... a NOCTUID MOTH (Leucania lor*ey*i ..." (PPQ).

CEIR 25(16):320 - "SHORTNOSED CATTLE LOUSE (Haematopinus eurusternus) ..." should read "SHORTNOSED CATTLE LOUSE (Haematopinus eur*y*sternus) ..." (PPQ).

CEIR 25(17):330 - FORAGE LEGUMES - "AN APHID (Acrythosiphon sp.) ..." should read "AN APHID (Ac*yr*thosiphon sp.) ..." (PPQ).

CEIR 25(17):333 - FOREST AND SHADE TREES - "EASTERN TENT CATERPILLAR (Malacosoma americana) ..." should read "EASTERN TENT CATERPILLAR (Malacosoma american*um*) ..."

CEIR 25(18):355 - CORRECTIONS - "Podisus maculiventrus ..." should read "... Podisus maculivent*ri*s ..."

Moss Aphids in the United States (Homoptera: Aphididae) [1]

Clyde F. Smith and George F. Knowlton [2]

Abstract: Keys, figures, hosts, and collection data are given for seven (7) species of aphids collected in the United States by placing "moss" in a modified Berlese funnel. Four of the species are new records for the United States.

Introduction: Little has been published concerning moss aphids in the United States. We have been collecting aphids from "moss" for several years with the aid of a modified Berlese funnel. It is usually difficult to obtain a pure sample of moss, therefore we are not listing the species of moss unless we were able to find the aphids feeding on the moss prior to taking the sample.

Several species of aphids, not recorded here, were collected in the Berlese funnels but most of them were obviously "accidental." Others, such as Pemphigini, are impossible to identify and none of them were observed feeding on moss.

The following papers would be of value to anyone working with moss aphids: Börner 1939, 1952; Heinze 1960a, 1960b, 1961; Hille Ris Lambers 1954; Müller 1973; Smith and Knowlton 1966; Stroyan 1955, 1963.

The following abbreviations are used for collectors:

GFK = George F. Knowlton
MWK = Mary W. Knowlton
CKS = Crystle K. Smith
CFS = Clyde F. Smith

Key to apterous viviparae

1. Antennal tubercles distinct, usually exceeding vertex (Fig. 2B, C, D) 2

   Antennal tubercles not distinct, not exceeding vertex (Fig. 1A, B, C; 2A) 4

2(1) Siphunculi with a distinct flange (Fig. 2A, B, D) 3
Siphunculi without a distinct flange (Fig. 2C) . . . . *Jacksonia papillata* Theobald

---

[1] Contribution from the Department of Entomology, North Carolina State University at Raleigh and the Department of Biology, Utah State University, Logan, Utah.

[2] Paper number 4634 of the Journal Series of the North Carolina Agricultural Experiment Station, Raleigh, North Carolina.

3(2) Siphunculi distinctly swollen; antennae and legs with long, conspicuous setae (Fig. 2D)
. . . . *Decorosiphon corynothrix* Börner

Siphunculi not distinctly swollen; setae on antennae and legs relatively inconspicuous (Fig. 2B)
. . . . *Myzodium modestum* (Hottes)

4(1) Siphunculi without a distinct flange (Fig. 1A, B, C) . . 5

Siphunculi with a distinct flange (Fig. 2A)
. . . .*Pseudacaudella rubida* (Börner)

5(4) Opening of siphunculi distinctly slanted or on side (*Aspidaphium*) 6

Opening of siphunculi nearly straight or at 45-degree angle to the sides of the siphunculus (Fig. 1C)
. . . . *Muscaphis stammeri* Börner

6(5) Processus terminalis of alate and aptera at least twice as long as base of antennal segment V (Fig. 1F); opening of siphunculus at tip and slanted (Fig. 1I)
. . . . *Aspidaphium utahensis* Smith and Knowlton

Processus terminalis less than twice as long as base of antennal segment V; opening of siphunculus tending to be toward the side and partially covered at tip (Fig. 1A) . . 7

7(6) Processus terminalis from 1.20 to 1.50 times as long as base of antennal segment V in aptera (Fig. 1D) and 1.67 to 2.18 times as long as base in alate; aptera with very strong and regular papillar sculpture, the lateral papillae being flatter convex-topped and with a basal constriction (not known from U.S.). . . . *Aspidaphium cuspidati* Stroyan

Processus terminalis 0.78 to 1.16 times as long as base of antennal segment V in aptera and 1.00 to 1.8 times as long as base in alate; aptera with very variable sculpture, but with the lateral papillae not regularly flat-topped or constricted at the base (Fig. 1E)
. . . .*Aspidaphium escherichi* Börner

Aspidaphium escherichi Börner 1939:81

Fig. 1A, E

Until 1974 this species was not known in North America.

Host: We did not observe this species feeding on moss. Stroyan (1963:87) records it from *Eurhynchium praeolongum*, *Pseudoscleropodium pervum*, *Rhylidiadelphus loreus* and ?*Mnium hornum*. Müller (1973: 220) discusses the biology of the species.

Collections: Although we have made several hundred collections of mosses, this species has been found only in one collection.

Utah, Utah County, American Fork Canyon, August 20, 1974 (74-47, CFS, GFK).

We have also seen specimens labeled *A. escherichi* from England and Germany.

Aspidaphium utahensis Smith and Knowlton 1966:21

Fig. 1B, F, I

This species is known only from Utah and Idaho.

Host: *Cratonuron filicinum* (Hedw.)

Collections: The following collections were made since the species was described in 1966:

Idaho, Franklin County, Hilyard Canyon, Aug. 13, 1974 (K74-35, GFK), Mink Creek, Aug. 26, 1974 (74-55, CFS, CKS).

Utah, Cache County, Blacksmith Fork Canyon, Feb. 18, 1972 (K72-6, GFK), Nov. 17, 1973 (K73-41, GFK); Logan Canyon, Feb. 1, 1971 (K71-1, K71-2, GFK), May 13, 1971 (K71-14, GFK), Sept. 27, 1971 (K71-123, GFK), Oct. 9, 1971(K71-114, GFK), Feb. 21, 1972 (K72-7, GFK, R. Cazier), Feb. 25, 1972 (K72-8, GFK, MWK), Aug. 5, 1972 (K72-9, K72-12, GFK, R. Cazier), Nov. 12, 1973 (K73-45, GFK), Nov. 14, 1973 (K73-46, GFK), Sept. 5, 1974 (K74-2, K74-7, GFK), Sept. 8, 1974 (K74-9, GFK), Sept. 9, 1974 (K74-3, K74-4, K74-5, GFK), Sept. 20, 1974 (K74-24, K74-29, GFK), Oct. 5, 1974 (K74-1, GFK), Oct. 16, 1974 (K74-41, K74-43, GFK); Logan Canyon (Logan Cave), Oct. 16, 1974 (K74-40, GFK); Logan Canyon (Spring Hollow), Nov. 10, 1973 (K73-40, GFK), Oct. 4, 1974 (K74-46, GFK); Millville, Aug. 20, 1974 (74-44, CFS, GFK), Sept. 27, 1974 (K74-28, GFK); Oak Creek Canyon, June 12, 1972 (K72-10, GFK); Smithfield Canyon, Sept. 10, 1974 (K74-8, GFK); Tony Grove Canyon, Aug. 5, 1972 (K72-11, GFK), Aug. 20, 1974 (74-51, CFS, GFK), Aug. 21, 1974 (74-52, 74-53, CFS, GFK); Tony Grove (Lewis M. Turner Campground), Oct. 16, 1974 (K74-37, GFK); Tony Grove Lake, Aug. 12, 1972 (K72-25, GFK).

Decorosiphon corynothrix Börner 1939:78

Fig. 2D

This species is very different from other moss feeding aphids, especially in morphological characters (see Fig. 1A-C, 2A-C).

Host: *Polytrichum commune* Hedw.

Collections: These are the first records of this species in North America.

North Carolina, Avery County, Grandfather Mountain, Oct. 14, 1968 (68-246, CFS, M.G. Robertson); Mitchell County, Roan Mountain, Aug. 23, 1973 (73-77, CFS, CKS), Oct. 2, 1973 (73-109, 73-111, CFS, CKS), Oct. 3, 1973 (73-113, CFS, CKS); Wilkes County, near Laurel Springs, Oct. 15, 1963 (CFS, CKS, J. Graham, 63-182), Aug. 22, 1973 (73-64, CFS, CKS); Yancey County, Blue Ridge Parkway, Oct. 3, 1968 (68-235, CFS, M.G. Robertson), Mount Mitchell, Oct. 6, 1968 (68-237, CFS, M.G. Robertson), Oct. 15, 1968 (68-249, CFS, M.G. Robertson), Aug. 25, 1973 (73-90, 73-91, CFS, CKS), Oct. 3, 1973 (73-122, CFS, CKS).

Tennessee, Washington County, near Roan, Oct. 2, 1973 (73-107, CFS, CKS), Washington County (?), Asa, Roan Mountain, June 9, 1971 (72-932, W. Tolbert).

We have also seen specimens labeled *D. corynothrix* from Belgium, Denmark, England, and Germany.

Jacksonia papillata Theobald 1923:19

Fig. 2C

The first record of this species in North America (Idaho) was by Eastop 1966a: 451.

Host: We have not observed this aphid feeding but most European workers give various species of grass as its host. It is included here because it often occurs in samples of "moss" which are processed through a modified Berlese funnel.

Collections: See Cooperative Economic Insect Report 24(49-52): 872 for detailed data on collections in Idaho, North Carolina, and Utah.

Muscaphis stammeri Börner 1952:132, 254

Fig. 1C, G, H

Börner (1952:254) and Müller (1973:215) both indicate that *Muscaphis musci* Börner and *M. Stammeri* Börner are very closely related species. Müller (1973:215) has examined the Börner types and loaned us 3 specimens from his collection which he states are "more convenient to the *stammeri* types than the *musci* type in the Börner collection." In our collections of *Muscaphis* from North Carolina and Idaho, there is a great deal of variation in size of the apterous viviparae. Also, some have 5-segmented antennae and others 6-segmented. This condition also occurs on individual specimens. Some of the specimens in our collections are indistinguishable from the specimens loaned to us by Müller. It is of interest this European species has been collected in both Eastern and Western United States.

Host: On *Hylocomium brevirostre* (Brid.) B.S.G. and *H. splendens* (Hedw.) B.S.G. in North Carolina. Not observed on the moss in Idaho.

Collections: These are the first records of this species in North America.

Idaho, Franklin County, Preston (Riverdale), Aug. 18, 1974 (74-38, CFS).

North Carolina, Avery County, Grandfather Mountain, Aug. 23, 1973 (73-81, 73-84, CFS, CKS); Watauga County, Boone, Sept. 29, 1962 (62-1130, CFS), Oct. 15, 1962 (62-1162, CFS, CKS); Yancey County, Blue Ridge Parkway, Aug. 25, 1973 (73-95, CFS, CKS).

We have also seen specimens labeled M. stammeri from England and Germany.

Myzodium modestum (Hottes) 1926:117

Fig. 2B

This species was described originally from the United States. However, it has been recorded from several European countries. At present, only one species of Myzodium has been described from North America. Clyde F. Smith and Grant Robinson are describing a new species of Myzodium from Utah. It is anticipated that the description will appear in the September 1975 issue of the Proceedings of the Entomological Society of Washington, Volume 77.

Host: Polytrichum commune Hedw.

Collections:

California, Fresno County, Sept. 24, 1961 (Schlinger).

Minnesota, Ramsey County, St. Paul, June 23, 1925 (F.C. Hottes).

North Carolina, Avery County, Grandfather Mountain, Oct. 14, 1968 (68-245, CFS, M.G. Robertson), Aug. 23, 1973 (73-77, 73-82, CFS, CKS); Macon County, Joanna Bald, Aug. 25, 1970 (S70-296, C. Parron); Mitchell County, Roan Gardens, Oct. 2, 1973 (73-109, CFS, CKS); Watauga County, Boone, Oct. 15, 1962 (62-1162, CFS, CKS); Wilkes County, Coughton Park near Laural Springs, Aug. 22, 1973 (73-64, CFS, CKS); Yancey County, Mount Mitchell, Oct. 6, 1968 (68-237, CFS, M.G. Robertson); Mount Mitchell (Camp Alice Trail), Oct. 15, 1968 (68-249, CFS, M.G. Robertson), Aug. 25, 1973 (73-91, CFS, CKS), Oct. 3, 1973 (73-122, CFS, CKS).

We have also seen specimens labeled M. modestum from Germany and Scotland.

Pseudacaudella rubida (Börner) 1939

Fig. 2A

This species was very abundant on Hylocomium splendens (Hedw.) B.S.G. at Mount Mitchell, N.C., Oct. 3, 1973, at which time it was heavily parasitized by Monoctonus caricis (Haliday). This is a new record for North America.

Host: Hylocomium splendens (Hedw.) B.S.G. and Polytrichum commune Hedw.

Collections:

North Carolina, Ashe County, Mount Jefferson, Aug. 1973 (73-93, CFS, CKS); Avery County, Grandfather Mountain, Oct. 1, 1973 (75-105, CFS, CKS); Wilkes County, Doughton Park near Laural Springs, Aug. 22, 1973 (73-64, CFS, CKS); Yancey County, Blue Ridge Parkway, Aug. 25, 1973 (73-87, CFS, CKS), Oct. 3, 1973 (73-115, 73-116, 73-118, 73-120, 73-121, CFS, CKS); Mount Mitchell, Sept. 15, 1973 (68-212, CFS, M.G. Robertson).

Tennessee, Washington County, near Roan, Oct. 2, 1973 (CFS, CKS).

We have also seen specimens labeled *P. rubida* from England and Germany.

References

Börner, C. 1939. Neue Gattungen und Arten der mitteleuropaischen Aphidenfauna. Arb. Physiol. Angew. Ent. Berlin-Dahlem 6:75-83. (Approximately 40 n. sp. and 10 n. gen.)

Börner, C. 1952. Europae centralis Aphides. Die Blattlause Mitteleuropas, Namen, Synonyme, Wirtspflanze, Generationszyklen, Mitt. Thur. Bot. Ges. 3:1-488.

Heinze, K. 1960a. Sytematik der mitteleuropäischen Myzinae mit besonderer Berücksichtigung der im Deutschen Entomologischen Institut befindlichen Sammlung Carl Börner (Homoptera: Aphidoidea-Aphididae). Beitr. Ent. 10:744-842, figs. 1-86.

Heinze, K. 1960b. Eine neue Mooslaus, *Neodecorosiphon* n. g. *muscicolens* n. sp. Zool. Anz. 165:193-196, figs. 1-2.

Heinze, K. 1961. Systematik der mitteleuropäischen Myzinae mit besonderer Berücksichtigung der im Deutschen Entomologischen Institut befindlichen Sammlung Carl Börner (Homoptera: Aphidoidea-Aphididae). Beitr. Ent. 11:24-96, figs. 87-131.

Hille Ris Lambers, D. 1954. Bladluizen op mossen. Buxbaumia 8(1/2):23 (5 species discussed.)

Hottes, F.C. 1926. Two new genera and a new species of Aphididae. Proc. Biol. Soc. Wash. 39:115-119, pl. II.

Müller, F.P. 1973. Aphiden on Moosen (Homoptera: Aphididae). Ent. Abhandl. 39(3):205-242.

Smith, C.F. 1974. An aphid, *Jacksonia papillata* Theobald. Coop. Econ. Ins. Rpt. 24(49-52):872-873.

Smith, C.F., and Knowlton, G.F. 1966. The genus *Aspidaphium* Börner (Homoptera: Aphididae). Pan-Pac. Ent. 42:20-24, fig. 1.

Stroyan, H.L.G. 1955. Recent additions to the British aphid fauna. Part II. Trans. Roy. Ent. Soc. London 106:283-340, pls. I-III, text figs. 1-3.

Stroyan, H.L.G. 1963. Notes on the species of Aspidaphium Börner, 1939 (Homoptera: Aphididae). Beitr. Ent. 13:81-88, figs. 1-2.

Theobald, F.V. 1923. A new genus and two new species aphides from Ross-shire. Scot. Natur. 1923:19-20, figs. A-E.

Acknowledgments

We are grateful to the following for the gift and/or loan of specimens and opinions concerning the identity of some of the species: L.M. Russell, Systematic Entomology Laboratory, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Maryland; H.L.G. Stroyan, Harpenden, Herts, England; Victor Eastop, British Museum of Natural History, England; D. Hille Ris Lambers, Bennekom, Netherlands; Kurt Heinze, Berlin-Dahlem, Germany; and F.P. Müller, Rostock, Germany (DDR).

We also greatly appreciate the identification of the mosses by Lewis E. Anderson, Duke University, Durham, North Carolina, and permission from the National Park Service, U.S. Department of Interior, and the North Carolina Department of Conservation and Development for permission to collect specimens in the parks.

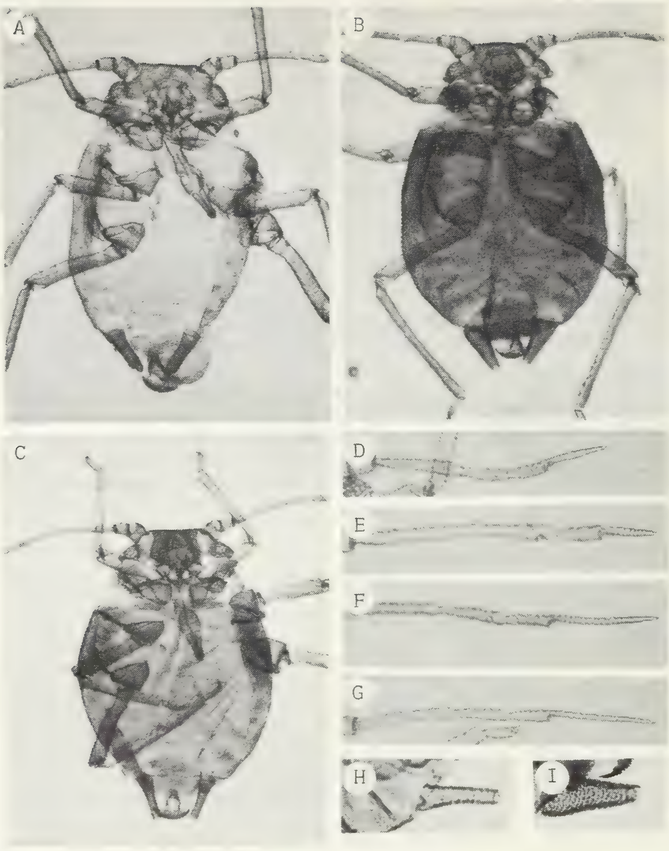


Figure 1

A - Aspidaphium escherichi Börner, coll. 74-47
B - Aspidaphium utahensis Smith and Knowlton, coll. K63-197
C - Muscaphis stammeri Börner, coll. 73-81
D - Aspidaphium cuspidata Stroyan (antenna), coll. Cambridge, England, 6-VIII-1953, Stroyan
E - Aspidaphium escherichi Börner (antenna), coll. K63-193
F - Aspidaphium utahensis Smith and Knowlton (antenna), coll. K63-197
G - Muscaphis stammeri Börner (antenna), coll. 73-81
H - Muscaphis stammeri Börner (siphunculus), coll. 73-81
I - Aspidaphium utahensis Smith and Knowlton (siphunculus), coll. 63-193

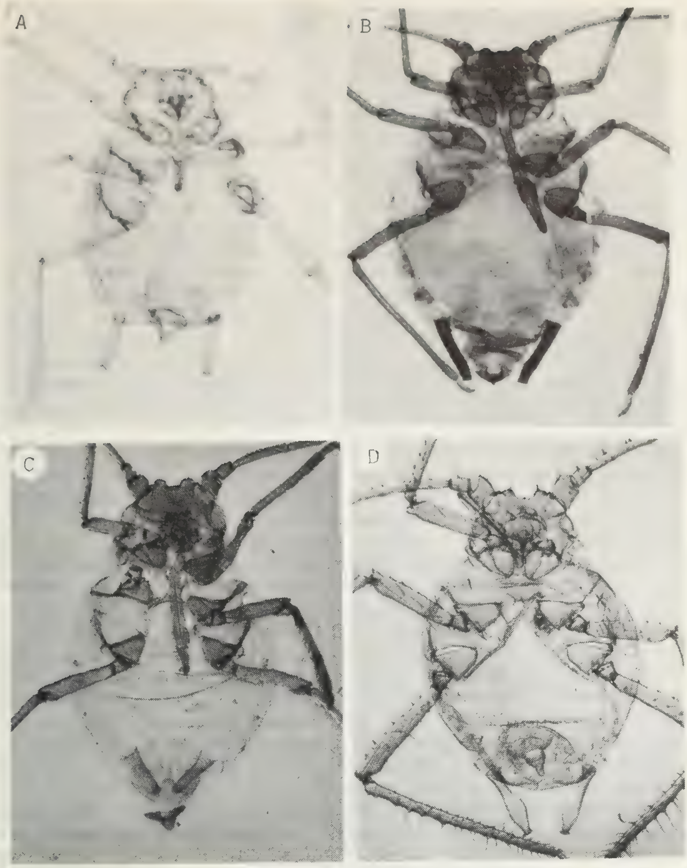


Figure 2

A - *Pseudacaudella rubida* (Börner), coll. 68-212
B - *Myzodium modestum* (Hottes), coll. S70-296
C - *Jacksonia papillata* Theobald, coll. 73-97
D - *Decorosiphon carynothrix* Börner, coll. 73-91

U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
25(21):423-431, 1975

Weather of the week continued from page 404.

moved to the western Great Lakes and upper Mississippi Valley. Thursday, the front from Canada had moved through Ohio and into Tennessee. Showers and thundershowers fell along the front as it moved rapidly through the North Central States. From a Low in Mississippi, a cold front extended southwestward into the gulf and a warm front east through Georgia. Severe weather occurred throughout the Southeast and north and west of the Low. Tornadoes were reported in northern Florida, Georgia, and South Carolina. Stations in Tennessee and Alabama had very heavy rain. The Canadian front moved off the east coast on Friday and a Low center again formed off New Jersey with a front trailing into the Carolinas and to Louisiana. Thunderstorm activity was experienced from the south Atlantic coast to the lower Mississippi Valley. Tornadoes and hail occurred in Georgia and heavy rain again fell in southern Alabama and in Louisiana. Afternoon and evening thundershowers were widely scattered over the northern and central Rockies and southern Plateau region. Some thundershowers were reported in extreme southern Texas. Another cool air mass moved into the States from Canada early Saturday and late in the day had pushed to a line from east South Dakota to Colorado and Wyoming. A few showers and thundershowers fell in North Dakota and Minnesota and generally along the east slopes of the Rockies and in Colorado. Denver again reported marble-sized hail. Instability in the Southwest caused scattered thunderstorms in the southern Rockies. More showers and thundershowers were scattered from the southern half of the Mississippi Valley to the central Atlantic and into Florida. Cooler air moved slowly on Sunday and reached to Wisconsin and Iowa through central Kansas and to a Low in southeast Colorado. By day's end, thunderstorms were common along the front and all along the east slopes of the Rockies into Texas. One report in Texas claimed 1.75-inch hail stones. A fast moving cold front crossing the Pacific Northwest kicked up dust in Washington, showers and thundershowers from Nevada to southern California, and snow flurries in the mountains. A Low pressure area in the Southwest caused locally heavy rains which required warnings of flash floods for rivers and streams in eastern Kentucky and West Virginia.

TEMPERATURES: Monday, cool air entering the North Central States caused some below-normal 30-degree readings along the Canadian Border and near the Great Lakes. Balmy temperatures covered much of the southern Rockies, most of Plains, and a large part of the country east to the Atlantic. Eastern Massachusetts had readings in the low eighties. Tuesday produced a record high so early in the season for Bakersfield, California, which recorded 106 degrees. Thursday, nighttime temperatures dipped into the 30's over portions of the northern Plains, upper Mississippi Valley, and northern Great Lakes region. Hot, dry weather covered the Southwest deserts. Warming extended northward Friday when 60-degree readings lasted until early morning in Montana. However, cool readings in the 40's dipped well into the southern Plains. Warming returned to the Plains and cooling to the West on Sunday. A record high of 94 degrees was recorded at St. Joseph, Missouri.

Weather of the Week continued from page [illegible]

[illegible]

[illegible]

U.S. DEPARTMENT OF AGRICULTURE
HYATTSVILLE, MARYLAND 20782

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF
AGRICULTURE
AGR 101

U.S.MAIL